

WHAT WE CLAIM IS:

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1. A defect inspection apparatus for a phase shift mask having a phase shifter pattern provided on a mask transparent substrate to produce a phase difference in transmitted light, which is characterized in that after
5 said phase shifter pattern has been formed, a phase shifter defect inspection is performed from a mask transparent substrate side of said phase shift mask.

2. A defect inspection apparatus for a phase shift
10 mask according to claim 1, wherein light is applied to said phase shift mask from the mask transparent substrate side thereof, and reflection images of at least two different phase shifter pattern fabricated regions are captured, and then respective image signals of the
15 reflection images are compared with each other to detect a defect on the mask from a difference between said signals.

3. A defect inspection apparatus for a phase shift mask according to claim 2, wherein said at least two different phase shifter pattern fabricated regions are
20 phase shifter pattern fabricated regions of chips different from each other.

4. A defect inspection apparatus for a phase shift mask according to claim 2 or 3, wherein the reflection images of said at least two different phase shifter
25 pattern fabricated regions are captured through respective magnifying optical systems.

5. A defect inspection apparatus for a phase shift mask according to claim 2, wherein said at least two

different phase shifter pattern fabricated regions are phase shifter pattern fabricated regions in an identical chip pattern.

- 5 6. A defect inspection apparatus for a phase shift mask according to claim 2 or 5, wherein the reflection images of said at least two different phase shifter pattern fabricated regions are captured through an identical magnifying optical system.

- 10 7. A defect inspection apparatus for a phase shift mask according to any one of claims 2 to 6, wherein said reflection images obtained by reflected light are dark field images obtained by dark field illumination or bright field images obtained by bright field illumination.